

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:
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WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY
(PCT Rule 43bis.1)

Date of mailing
(day/month/year)

31. 5. 2005

Applicant's or agent's file reference
S-9

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/JP2005/001306

International filing date (day/month/year)

25.01.2005

Priority date (day/month/year)

27.01.2004

International Patent Classification (IPC) or both national classification and IPC

Int.Cl.⁷ F25B39/04

Applicant

SHOWA DENKO K.K.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Date of completion of this opinion

17.05.2005

Name and mailing address of the ISA/JP

Japan Patent Office

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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/JP2005/001306

Box No. I Basis of the opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

- ☐ a sequence listing
☐ table(s) related to the sequence listing

b. format of material

- ☐ in written format
☐ in computer readable form

c. time of filing/furnishing

- ☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

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Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	4, 5, 8-10, 13-17	YES
	Claims	1-3, 6, 7, 11, 12	NO
Inventive step (IS)	Claims		YES
	Claims	1-17	NO
Industrial applicability (IA)	Claims	1-17	YES
	Claims		NO

2. Citations and explanations

Document1:JP 10-205920 A(CALSONIC CORPORATION)1998.08.04,
Paragraph 0012-0024, Fig.1

Document2:JP 2002-372340 A(CALSONIC KANSEI CORPORATION)
2002.12.26, Paragraph 0025, 0037, 0038, Fig.2

Document3:JP 5-117682 A(IDEMITSU KOSAN CO.LTD.)1993.05.14,
Paragraph 0008 & US 5295357 A

Document4:JP 7-180930 A(DENSO CORPORATION)1995.07.18,
Paragraph 0013-0039, Fig.1

The subject matters of claims 1-3 and 11 do not appear to be novel with respect to the Document 1, cited in the ISR.

The subject matters of claims 6, 7 and 12 do not appear to be novel with respect to the Document 4, cited in the ISR.

The subject matter of claim 4 does not appear to involve an inventive step with respect to the Document 1 and the Document 2, cited in the ISR.

The Document 2 discloses a condenser that is 300 mm in height, 700 mm in width as it's seen from the front. It also discloses a refrigerant tube up to 1.8 mm in height and spacing of 5.5 to 8 mm between each tube.

A skilled person in the art would regard it as a design procedure to change the size of a condenser disclosed in the Document 1 to that of the condenser disclosed in the Document 2.

The subject matter of claim 5 does not appear to involve an inventive step in view of the Document 1 and the Document 3, cited in the ISR.

The Document 3 discloses a refrigerant contains 5 to 50 mass % of a compressor lubricant.

A skilled person in the art would regard it as a design procedure to apply the refrigerant disclosed in the Document 3 to the condenser disclosed in the Document 1.

The subject matter of claim 8 does not appear to involve an inventive step in view of the Document 4.

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: V 2. Citations and explanations

The Document 4 discloses a condenser that has 16 refrigerant tubes in total and the number of tubes positioned below the center line of the refrigerant inlet is 7.

So if the number of refrigerant tubes in total is doubled to 32, a skilled person would regard it as a design procedure to double the number of the tubes positioned below the center line of the refrigerant inlet to 14.

The subject matter of claim 9 does not appear to involve an inventive step with respect to the Document 2 and 4.

The subject matter of claim 10 does not appear to involve an inventive step with respect to the Document 3 and 4.

The subject matters of claims 13-16 and 17 do not appear to involve an inventive step with respect to the Document 1,3 and 4.